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1. This document has been translated by computer (May 26, 2005). So the translation may not reflect the original precisely.

2. \*\*\*\* shows the word which can not be translated.

3. In the drawings, any words are not translated.

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## CLAIMS

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### [Claim(s)]

[Claim 1] In the cash transaction equipment which has the closing motion control means which will close the closing motion section if a predetermined released time passes after controlling closing motion of payment opening, the closing motion section of this payment opening, and this closing motion section and opening the closing motion section at the time of payment processing It is cash transaction equipment with which an actuation means to input time amount extension directions is established, and said closing motion control means is characterized by extending the released time of said closing motion section when said actuation means is operated.

[Claim 2] In the cash transaction equipment which has the closing motion control means which will close the closing motion section if a predetermined released time passes after controlling closing motion of payment opening, the closing motion section of this payment opening, and this closing motion section and opening the closing motion section at the time of payment processing It is cash transaction equipment with which a setting means to set up extended time amount, and a means to display the set-up extended time amount are established, and said closing motion control means is characterized by extending only the time amount which had the released time of said closing motion section set up if extended time amount is set up by said setting means.

[Claim 3] In the cash transaction equipment which has the closing motion control means which will close the closing motion section if a predetermined released time passes after controlling closing motion of payment opening, the closing motion section of this payment opening, and this closing motion section and opening the closing motion section at the time of payment processing, and a means to input the dealings amount of money It is cash transaction equipment which establishes a count means to calculate the accompanying amount of money from said dealings amount of money, and to calculate the extended time amount according to this accompanying amount of money, and is characterized by only said calculated extended time

amount extending the released time of said closing motion section, as for said closing motion control means.

[Claim 4] Cash transaction equipment given in any 1 term of claims 1-3 characterized by providing a display means to display time amount until said closing motion section closes.

[Claim 5] In the cash transaction equipment which has the closing motion control means which will close the closing motion section if a predetermined released time passes after controlling closing motion of payment opening, the closing motion section of this payment opening, and this closing motion section and opening the closing motion section at the time of payment processing A 1st actuation means to input closing motion section automatic closing discharge directions, and a 2nd actuation means to input closing motion section closing directions are established. Said closing motion control means Cash transaction equipment characterized by closing said closing motion section when the condition that canceled the control which closes said closing motion section, and the closing motion section opened wide when said 1st actuation means was operated is maintained and said 2nd actuation means is operated.

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#### DETAILED DESCRIPTION

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##### [Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to the cash transaction equipment of the format which payment opening closes automatically, after payment opening's opening and carrying out predetermined time progress about cash transaction equipment at the time of payment. As an example of the cash transaction equipment of this invention, there is a transfer machine installed in a financial related company.

[0002]

[Description of the Prior Art] In a transfer machine, payment opening which incorporates cash in equipment is prepared, and a shutter is formed in this payment opening. By opening, only when a customer pays in, a foreign matter invades from payment opening, or this shutter has prevented that the cash which paid in is sampled from payment opening.

[0003] When conducting payment dealings with a transfer machine, a customer performs required actuation, such as an input of the dealings amount of money, according to a screen display. After the input of the dealings amount of money etc. is completed, a commission is calculated, it is displayed on a screen and the shutter of payment opening opens. A customer in from payment opening. [ by which a screen display was carried out during disconnection of a shutter ] [ the dealings amount of money and ] [ of a commission ] [ total ] In the conventional transfer machine, when the predetermined time after disconnection of the shutter of payment opening passed, after sounding a nudge sound, the automatic closing of the shutter is carried out.

And in a transfer machine, when the amount of money paid in is counted and the payment amount of money is insufficient, a shutter is opened wide again and the payment of an insufficiency is demanded from a customer.

[0004]

[Problem(s) to be Solved by the Invention] In the above-mentioned conventional transfer machine, when a customer prepares change after the display of a commission and the preparation takes time amount, before change is assembled, a nudge sound will sound. For this reason, a customer cares about a back matrix, gives up paying in with small money, and pays in with a bill. In this case, time amount will be taken on the contrary for change discharge. Moreover, the dissatisfaction will be left to a customer.

[0005] On the other hand, even if a nudge sound sounds, even when change cannot be prepared, a shutter closes regardless of a customer's hope. Consequently, since it becomes insufficient paying in, shutter disconnection actuation will be repeated again and dealings processing will take time amount. Moreover, since a customer does not understand the remaining released time, a customer is made to have the obsession of not knowing when a shutter is closed, in the conventional transfer machine.

[0006] Thus, in the conventional transfer machine, according to the released time of the shutter of payment opening being fixed, dealings processing took time amount on the contrary, it became inadequate giving one's service to a customer, and there was a trouble that dealings processing effectiveness fell. This invention aims at offering the cash transaction equipment which can control the released time of the closing motion section of payment opening according to a customer's needs.

[0007]

[Means for Solving the Problem] This invention is made in order to attain the above-mentioned purpose. After the cash transaction equipment of this invention controls closing motion of payment opening, the closing motion section of payment opening, and the closing motion section and opens the closing motion section at the time of payment processing, when a predetermined released time passes, it has the closing motion control means which closes the closing motion section.

[0008] In the 1st mode of this invention, an actuation means to input time amount extension directions into the above-mentioned cash transaction equipment is established, and when an actuation means is operated, as for a closing motion control means, only fixed time amount extends the released time of the closing motion section. In addition, when an actuation means is not operated, the closing motion section closes after the predetermined passage of time. Thereby, a customer can extend the released time of the closing motion section by operating an actuation means, when it judges that preparing the dealings amount of money and the accompanying amount of money, such as a commission, takes time amount. Therefore, since payment can be finished while the closing motion section of payment opening has opened wide, it is lost that the dealings processing time becomes long superfluously.

[0009] It can make it possible to perform extension of a released time two or more times not only in 1 time in this 1st mode. Thereby, a customer can extend time amount as he is required. Moreover, this count of extension can also be restricted. In the 2nd mode of this invention, a setting means to set extended time amount as the above-mentioned cash transaction equipment, and a means to display the set-up extended time amount are established, and a closing motion control means will extend only the time amount which had the released time of the closing motion section set up, if extended time amount is set up by the setting means. In addition, when an actuation means is not operated, the closing motion section closes after the predetermined passage of time.

[0010] Thereby, as for a customer, only the time amount can extend the released time of the closing motion section by setting up desired extended time amount, looking at a display means. Therefore, since payment can be finished while the closing motion section of payment opening has opened wide, it is lost that the dealings processing time becomes long superfluously. In the 3rd mode of this invention, a count means to calculate the accompanying amount of money, such as a commission, from the dealings amount of money to the above-mentioned cash transaction equipment, and to calculate the extended time amount according to this accompanying amount of money is established, and said closing motion control means extends only the extended time amount which had the released time of the closing motion section calculated. A count means calculates the money number of sheets of the accompanying amount of money when you have no change, and it sets up extended time amount for a long time, so that there is much number of sheets.

[0011] Even if a customer does not perform exceptional actuation by this, the released time of the closing motion section is extended only for time amount required for payment. And since payment can be finished while the closing motion section of payment opening has opened wide, it is lost that the dealings processing time becomes long superfluously. In the 1st of a more than - the 3rd mode, it is desirable to form the equipment which displays time amount until the closing motion section of payment opening closes. A customer can do payment processing calmly by checking this residual time. Moreover, when it judges that residual time is insufficient, time amount extension in the 1st and 2nd modes can be operated.

[0012] In the 4th mode of this invention, a 1st actuation means input closing-motion section automatic closing discharge directions into the above-mentioned cash-transaction equipment, and a 2nd actuation means input closing-motion section closing directions prepare, the condition that a closing-motion control means canceled the control will close the closing-motion section if the 1st actuation means is operated, and the closing-motion section opened wide maintains, and when the 2nd actuation means is operated, the closing-motion section closes. In addition, when the 1st actuation means is not operated, the closing motion section closes after the predetermined passage of time.

[0013] When it judges that the closing motion section closes before, as for a customer, payment ends by this, if it supposes that the closing motion section is wide opened by operating the 1st actuation means and payment ends, the 2nd actuation means can be operated and the closing motion section can be closed.

[0014]

[Embodiment of the Invention] Hereafter, the example which applied this invention to the transfer machine is explained using drawing. Drawing 1 is the functional block diagram of a transfer machine. In drawing 1, 100 is a control section, is constituted by CPU and performs data processing, operation, and control. 101 is ROM and stores a basic program required for processing of a control section 100. 102 is a timer and measures the time amount to shutter closing.

[0015] 103 is RAM and stores payment opening shutter disconnection time data etc. 104 is a money unit, performs discernment of payment money, receipt, expenditure, etc., and controls closing motion of the payment opening shutter 106 through the device control section 105. In addition, although this specification explains the closing motion section of payment opening as a shutter, it is possible to adopt other means, such as a door. 107 is an actuation unit, by the customer, analyzes selection and the key information by which depression was carried out, and notifies the result to a control section 100.

[0016] 108 is a display unit, customer actuation guidance is created, or creates the contents check screen of dealings processing, and displays it on a display (illustration abbreviation). 109 is a nudge sound singing unit and a sound reports to a customer that a payment opening shutter closes soon etc. 110 is a payment opening sensor and detects the shelter of payment openings, such as a customer's hand.

[0017] The parts surrounded by the dotted line are the various units 120, and in operating as a transfer machine, they are indispensable. However, for explanation of this example, since it is unnecessary, the explanation about each is omitted. Next, actuation of the transfer machine of drawing 1 is explained based on a flow chart.

(Example 1 of operation) The flow chart of drawing 2 - drawing 4 shows the 1st example of processing actuation of a transfer machine. Only fixed time amount can extend a released time by actuation of a customer, and this example enables it to specify the count of extension by the count of actuation at the time of disconnection of a payment opening shutter, when a customer is going to do time amount extension.

[0018] Step 10 is transfer procedure processing by the customer, and transfer place assignment, transferred money frame assignment, etc. are performed by the customer by the actuation unit 107. About this processing, since it is not directly [ the summary of this invention and ] related, detailed explanation is omitted. After the transfer procedure processing by the customer is completed, it progresses to step S20. At step 20, a control section 100 transmits transfer data to the display unit 108. The display unit 108 which received data creates the contents check screen format of dealings, and displays the contents check screen of dealings on a display. The example of a check screen is shown in drawing 5 .

[0019] In the check screen of drawing 5, the key 311,312 for customer selection is installed on a touch panel. 311 is a confirmation key and 312 is a cancellation key. In addition, although various keys are explained in this specification as what is installed on a touch panel, various keys can also install a keyboard etc. on other switching means. A customer checks the

contents of dealings with the displayed check screen, and if correct and you will want to touch and cancel a confirmation key 311, he will touch the cancellation key 312.

[0020] If the key touch by the customer is detected at step S30, the actuation unit 107 will transmit a check or cancellation data to a control section 100. In a control section 100, a depression key is judged, and when a cancellation key is depressed, and return and a confirmation key are depressed to step S10, it shifts to step S40. At step S40, a control section 100 transmits commission data and payment total amount-of-money data to the display unit 108, after computing a commission from a transferred money frame. The display unit 108 which received data creates a payment processing information screen format, and displays a payment processing information screen on a display. The example of a payment processing information screen is shown in drawing 6. The contents of the key for customer selection change on this screen. 321 is a shutter closing time amount extension key, and 322 is a transfer processing cancellation key. Moreover, 323 is a residual time display to shutter closing.

[0021] At step S50, a control section 100 directs payment opening shutter opening to the money unit 104. The money unit 104 which received directions transmits device control data to the device control section 105. According to this control data, the device control section 105 opens the payment opening shutter 106, and the notice of the completion of opening is transmitted from the money unit 104 to a control section 100.

[0022] At step S60, a control section 100 starts timer subtraction of shutter opening time amount. The control section 100 subtracts the shutter opening time data value stored in the field 333 on RAM103 shown in drawing 7 to the interrupt timing from a timer 102. And the subtracted data value is transmitted to the display unit 108. The display unit 108 which received data expresses the shutter opening remaining time to the residual time display 323 of a payment processing information screen ( drawing 6 ) as step S70.

[0023] At step S80, the customer actuation key press of the control section 100 is carried out to the actuation unit 107, it directs a lowering monitor, and a response inquiry is carried out to fixed timing. The directed actuation unit 107 carries out the response of the depression key information to a control section 100, when depression of the keys 321 and 322 of the screen of drawing 6 is detected. If the control section 100 which received the response judges and carries out the key press of the contents of a response and there is no lowering, it will shift to step S90 and it will carry out a key press, and if lowering occurs, it will shift to step S100.

[0024] At step S90 (with [ an extended key press is carried out and ] no lowering), a control section 100 judges the shutter opening remaining time data stored in the field 333 of RAM103 ( drawing 7 ), if it is not 0, it will judge un-passing the deadline of, to step S60, if they are return and 0, it will judge it as deadline, and it shifts to step S140. At step S140, a control section 100 directs the check of the shelter of payment opening to the money unit 104 at the same time it directs nudge sound singing to the nudge sound singing unit 109. The nudge sound singing unit 109 which received directions performs singing of a nudge sound until it receives directions of a singing halt from a control section 100. Moreover, the money unit 104 which received directions leads the condition of the payment opening sensor 110 through the device control section 105, and carries out the response of the condition to a control section 100.

[0025] At step S150, it directs closing of a payment opening shutter to the money unit 104 at the same time the control section 100 which received the response judges a sensor condition, and it directs a halt of the singing of a nudge sound to the nudge sound singing unit 109, when you have no shelter. The nudge sound singing unit 109 which received directions stops singing, and the money unit 104 closes the payment opening shutter 106 through the device control section 105.

[0026] Processing for transfer processing termination is performed at step S160. Since this processing is not directly [ the summary of this invention, and ] related, explanation is omitted. If a customer does not depress the extended key 321 as explained above, the shutter 106 of payment opening is closed after opening, if the time amount set as the beginning to the RAM field 333 passes.

[0027] At step S100 (carrying out an extended key press and being [ lowering and ]), a control section 100 will shift to step S110, if depression key classification was judged and the extended key was depressed, and if the cancellation key was depressed, it will progress to transfer processing cancellation processing. In addition, since this transfer processing cancellation processing is not directly related to the summary of this invention, explanation is omitted. At step S110 (a depression key is an extended key), after carrying out the count allowed value of extension stored in the field 323 of RAM103 ( drawing 7 ) -one, a control section 100 judges the value, if it is in tolerance, it will shift to step S120, and if the allowed value is reached, it will shift to step S130. In addition, the count allowed value of extension stored in this field 323 is adjustable by setup of a transfer machine.

[0028] At step S130 (count allowed value attainment of extension), a control section 100 transmits an extended warning information indicative data to the display unit 108, and directs a display. The display unit 108 which received directions creates an extended invalid information display format, and displays the extended warning information display screen of drawing 8 on display actuation. This screen deletes the display of the extended key of the input-process information screen of drawing 6 , and indicates that extension visits, and there comes and is. [ no ] Then, it shifts to step S120.

[0029] At step S120, a control section 100 adds the extended timer value stored in the field 331 of RAM103 ( drawing 7 ) to the shutter opening time data of a field 333, and returns to step S60. Consequently, shutter opening time amount is extended by the count to which the customer operated the extended key. Then, if the value stored in the field 333 of RAM103 is set to 0, it will be judged as deadline at step S90, and will shift to step S140, and processing which terminates dealings processing will be performed.

[0030] According to the example explained above, a customer can extend the opening time amount of a shutter by depressing an extended key, when the remaining time displayed on the screen of a display is seen and the remaining time judges that it is insufficient. Moreover, only not only 1 time but the permitted count can perform the extension.

(Example 2 of operation) The 2nd example of operation is explained using the flow chart of drawing 9 . When this example extends the opening time amount of a payment opening shutter, a customer enables it to set up extended time amount.

[0031] The flow chart of drawing 9 is replaced with the flow chart of drawing 4 of the above-mentioned example 1 of operation. That is, the 2nd actuation is explained by the flow chart of drawing 2 R> 2, drawing 3, and drawing 9. When there is no depression of an extended key, the flow of drawing 2 and drawing 3 is performed and the shutter 106 of payment opening is closed after predetermined time progress. If there is depression of a key, it will shift to step S100 of drawing 9 from step S80 of drawing 2.

[0032] If the control section 100 judged depression key classification and the extended key was depressed at step S100, it will shift to step S210, and if the cancellation key was depressed, it will progress to transfer processing cancellation processing. A control section 100 takes out key input control lead with step S210 (a depression key is an extended key) to the actuation unit 107 while issuing directions of an extended time setting screen display to the display unit 108. The display unit 108 which received directions creates an extended time setting screen format, and displays the extended time setting screen shown in drawing 10 on display actuation.

[0033] In drawing 10, 351 is the present residual time display area, and 352 is the display area of the extended time amount which the customer set up. Moreover, 353 is a time amount input key, 354 is a cancellation key, and 355 is a confirmation key. At step S220, a customer sets up the extended time amount of hope by the extended time amount input key. If the confirmation key 355 after termination of a setup is depressed, it will shift to step S230. If the cancellation key 354 is depressed, it will shift to transfer cancellation processing.

[0034] At step S230, the response of the hour entry set up by the customer is carried out from the actuation unit 107 to a control section 100, and a hour entry is judged, and if the control section 100 which received the response is an effective data, it stores customer setting extension time data in the field 334 of RAM103 (drawing 7). Next, a control section 100 adds the customer setting extension time data of the field 334 of RAM103 to the shutter opening time data of a field 333, and shifts to step S60.

[0035] After shutter opening time amount's passing, since the processing after step S60 is explanation ending in the above-mentioned example 1 of operation, although explanation here is omitted, if customer setting extension time amount passes further, deadline is judged at step S90, it shifts to the processing after step S140, and the shutter 106 of payment opening closes it.

(Example 3 of operation) The 3rd example of operation is explained using the flow chart of drawing 11. This example sets up the opening time amount of a payment opening shutter automatically according to the number of sheets of the coin of a transfer commission.

[0036] Current and a transfer commission are 103 yen of a 103 yen multiple, 206 yen, and 309 yen. If it is going to pay in without change in cash, for 103 yen, it will become 12 sheets for four sheets and 206 yen, and the number of sheets of a coin will become 20 sheets for 309 yen, as shown in drawing 12. This example considers that the time amount for which a customer prepares a commission is also proportional to the number of sheets of a coin, and changes the opening time amount of a payment opening shutter according to a commission.



[0037] The flow chart of drawing 11 is inserted between step S40 of the flow chart of drawing 2 of the above-mentioned example 1 of operation, and step S50. That is, actuation of this example is performed by the flow chart of drawing 2 R> 2, drawing 3 , drawing 4 , and drawing 11 . If a commission is computed and a payment processing information screen is expressed to a display even as step S40 of drawing 2 , it will shift to step S310.

[0038] At step S310, the computed commission is judged, and the time data corresponding to a commission is led from the fields 335-337 of RAM103 ( drawing 7 ), and is saved to the shutter opening time data storing field 333. If it is 103 yen and is 206 yen from the time data storing field 335 for 103 yen at step S320, by step S330, if it is 309 yen, the \*\* time data storing field 337 to the data of 309 yen of 206 yen are led at step S340 from the \*\* time data storing field 336, and it is saved to a field 333 at step S350.

[0039] After processing of step S350 is completed, it shifts to step S50 of drawing 2 R> 2. The processing after step S50 is explanation ending, and the same processing as the above-mentioned example 1 of operation is performed. However, when the opening time amount of the shutter 106 of payment opening has many coins to prepare, it becomes long, and it becomes short when there are few coins. Therefore, even if a customer does not do extended actuation, as for the shutter opening time amount of payment opening, only required time amount is extended automatically.

[0040] In addition, even if automatic extension is carried out as mentioned above, when shutter opening time amount runs short, it can extend further by a customer's extended key stroke. Moreover, this time amount extension can also perform fixed, extended time amount two or more times. It is also possible to combine with what sets extended time amount as \*\*\*\* like the above-mentioned example 2 of operation. Furthermore, although the amount of a commission or the number of coins is changed in the future, it can respond by rewriting the data of each field of RAM103 to this.

[0041] (Example 4 of operation) The 4th example of operation is explained using the flow chart of drawing 13 . This example cancels automatic closing of a payment opening shutter by actuation of a customer, and makes a shutter close by actuation of a customer. The flow chart of drawing 13 is replaced with the flow chart of above-mentioned drawing 4 . That is, the 4th actuation is explained by the flow chart of drawing 2 , drawing 3 , and drawing 13 R> 3. Moreover, the payment processing information screen displayed in step S40 of drawing 2 is transposed to the screen of drawing 14 . That is, Pause key 361 and the shutter closing (it shuts) key 362 for shutter automatic closing discharge are set to a payment processing information screen. Moreover, 363 is a transfer processing cancellation key.

[0042] When there is no depression of these keys, the flow of drawing 2 R> 2 and drawing 3 is performed, and the shutter 106 of payment opening is closed after predetermined time progress. If there is depression of a key, it will shift to step S420 of drawing 13 from step S80 of drawing 2 . At step S420, the classification of a depression key is judged, if it is a Pause key, it will shift to step S430, and if it is a cancellation key, it will shift to cancellation processing of transfer processing.

[0043] At step S430, a control section 100 directs the depression monitor of a shutter closing key to the actuation unit 107, and carries out a response inquiry by the fixed timer. The directed actuation unit 107 carries out the response of the depression key information to a control section 100, when depression is detected. The control section 100 which received the response judges the contents of a response, and if it is a shutter closing key, it will shift to the shutter closed shop operation of step S150. If it is not a shutter closing key, the opening condition of the payment opening shutter 106 will be held.

[0044] Therefore, when the need for time amount extension is accepted, after he depresses Pause key 361 and ends payment, a customer depresses a closing key and should just close a shutter.

[0045]

[Effect of the Invention] According to this invention, the cash transaction equipment which can control the released time of the closing motion section of payment opening according to a customer's needs can be obtained.

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## TECHNICAL FIELD

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[Field of the Invention] Especially this invention relates to the cash transaction equipment of the format which payment opening closes automatically, after payment opening's opening and carrying out predetermined time progress about cash transaction equipment at the time of payment. As an example of the cash transaction equipment of this invention, there is a transfer machine installed in a financial related company.